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September 11, 1997

VIA HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Re: Ex Parte Presentation
MM Docket No. 87-268

Dear Mr. Caton:

Pursuant to Section 1.1206 of the Commission's Rules, this is to report that on September 3, 1997, a representative of Sinclair Broadcast Group, Inc. met with Mr. Bruce A. Franca, Deputy Chief of the Commission's Office of Engineering and Technology, to deliver and discuss the contents of the attached letter in connection with the above-referenced proceeding. The letter includes a memorandum which indicates a potential solution to the power disparity existing between UHF and VHF television stations. Two copies of the letter accompany this filing.

Please place this letter in the record of the above-referenced proceeding.

Respectfully submitted,

C. Brooke Temple III

C. Brooke Temple III

Attachment
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cc: Mr. Bruce Franca, Office of Engineering and Technology

No. of Copies rec'd 0+1
List ABCDE

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September 3, 1997

Mr. Bruce A. Franca
Deputy Chief
Office of Engineering & Technology
Federal Communications Commission
2000 M Street, N.W., Room 416
Washington, D.C. 20554

Dear Bruce:

Attached is a memo which Nat Ostroff prepared indicating a potential solution to the power disparity existing between UHF and VHF television stations. Nat thought it would be best for you to review this and then discuss it over the telephone. Of course, he would be available for any meetings. Nat can be reached at (410) 662-1469. In the meantime, if you have any questions about the memo, please feel free to call Nat or me.

Sincerely,

Martin R. Leader

MRL/dm
3070-000

Attachment

Post-it® Fax Note 7671 | Date 9/3/97 | # of pages 8
To Martin Leader, Esq | From Nat Ostroff
Co./Dept. | Co. Sinclair
Phone # | Phone # 410 467 5005
Fax # 202-2966518 | Fax # 410 366 3491

MEMO
~~8/20/97~~ 9/

A POSSIBLE SOLUTION TO THE UHF vs VHF DIGITAL POWER ISSUE

Nat S. Ostroff

A. The Problem

The FCC table of allotments has set up a large power differential between the UHF and VHF industries moving to the digital service. This power differential is as much as 20:1 in many major markets. The UHF industry is seriously concerned that such a power difference will upset the competitive balance that exists today and provide the VHF industry with an unfair windfall advantage. This is especially true for coverage inside of the grade A contour (radio horizon) for indoor antenna reception. Such a situation could damage the chances of a successful DTV roll out.

B. Background

The FCC chose to try and replicate the coverage area of every television station when they transition to digital. The VHF stations, by the nature of VHF propagation, cover areas that are further over the radio horizon than the UHF stations can achieve. The desire by the FCC to "replicate" the old analog "over the horizon"coverage in the digital spectrum created the power differential that is represented in the table of allotments today. The FCC definition of "replication" ignored the effect of the power differential on the ease of reception inside of the grade A and over the principle city of license and only focused on the signal delivered to the outer most fringes of the grade B. The result of this approach is to enhance the coverage for grade A located low efficiency indoor antennas for the VHF high power stations while creating a disadvantage for the lower power UHF stations. Such a disadvantage does not exist today in the analog world. This is an unintended outcome that needs to be corrected.

C. A Possible Solution

Since the VHF stations only real advantage over the UHF stations today lies in their ability to propagate signals over the horizon it seems that a solution that focuses on recreating the competitive landscape inside of the radio horizon while allowing the VHF digital stations to reach their Grade B audience might satisfy all parties. There are at least two possible solutions. Both solutions employ a vertical beam

shaping of the transmitting antenna to place the energy where it is needed.

The first solution would require that the VHF stations restrict their radiated power inside of the grade A coverage contour to no more than the equivalent power granted to the UHF stations.. That is 50,000 watts in many major markets. The VHF stations could then direct their 1,000,000 watts toward their grade B. This would represent a true replication of today's coverage and competitive landscape. There is some question as to the technical feasibility of constructing antennas that could achieve such a power distribution. This leads to the second solution.

The second and technically achievable solution would allow the UHF stations to radiate at the same power as the VHF stations, that is a maximum of 1,000,000 watts, as long as they directed that power so that it did not produce a field at their grade B contour that was greater than the equivalent of their current allocated digital power from an antenna that was aimed at the horizon. This solution achieves the true replication of the grade A competitive landscape while preserving the interference protection built into the present table of allotments and allows the VHF stations to reach their grade B viewers.

The effect of allowing the UHF stations to direct their power inside of the grade A at the same level as the VHF stations but restricting the UHF stations, at their grade B contour, recognizes the equivalency of today's coverage between UHF and VHF in the grade A. This solution also recognizes and preserves the VHF stations distant coverage advantage.

C. Action

The FCC could adopt the second solution without changing anything in the table of allotments. It only requires a change in the language about how the transmitted power is directed. There is no impact on interference and therefore should be acceptable to the FCC.

D. Impact of a Shaped Beam Antenna Solution

The second solution that allows UHF stations to have the same power as the VHF stations inside of the grade A but restricts them at the edge of their grade B, while allowing the VHF stations to aim their power over the horizon, cannot rationally be opposed by the VHF industry since it satisfies their main concerns. The only basis for their objection, if any, would be that they will lose their advantage that was built into the table of allotments. The UHF industry should be satisfied with this solution since it replicates the competitive landscape that is present in the analog would and

permits reception, on an equal basis, by indoor antennas inside of the grade A contour.

Attached is a memo and data from a major antenna manufacturer that confirms the feasibility of the shaped beam solution. There is also a set of typical antenna patterns and a field strength plot that would meet the objectives of the recommended solution. These antennas are adaptations of standard technologies and do not require any special technical innovations.

Dielectric Communications

PO Box 949
Tower Hill Road
Raymond, ME 04071
Phone: (207) 655-4555
FAX: (207) 656-7120

Fax

To:	Del Parks - Sinclair Broadcasting	**From:**	Ernest H. Mayberry
Fax:	410-662-4778	**Pages:**	4
Phone:	410-467-4545	**Date:**	August 25, 1997
Re:	OVERTILTED DTV ELEVATION PATTERN	**CC:**	J. Zuba

☐ Urgent ☑ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

Del,

As discussed attached are the elevation patterns, and tabulation data for a DTV antenna design that shows over tilting to produce -13 dB at the horizon (0.5° assumed). With a peak lobe gain = 25 x power, 40 kW antenna input power is required to produce 1,000 kW ERP at 2.6° below horizontal.

Let me know if there are any questions.

Regards,

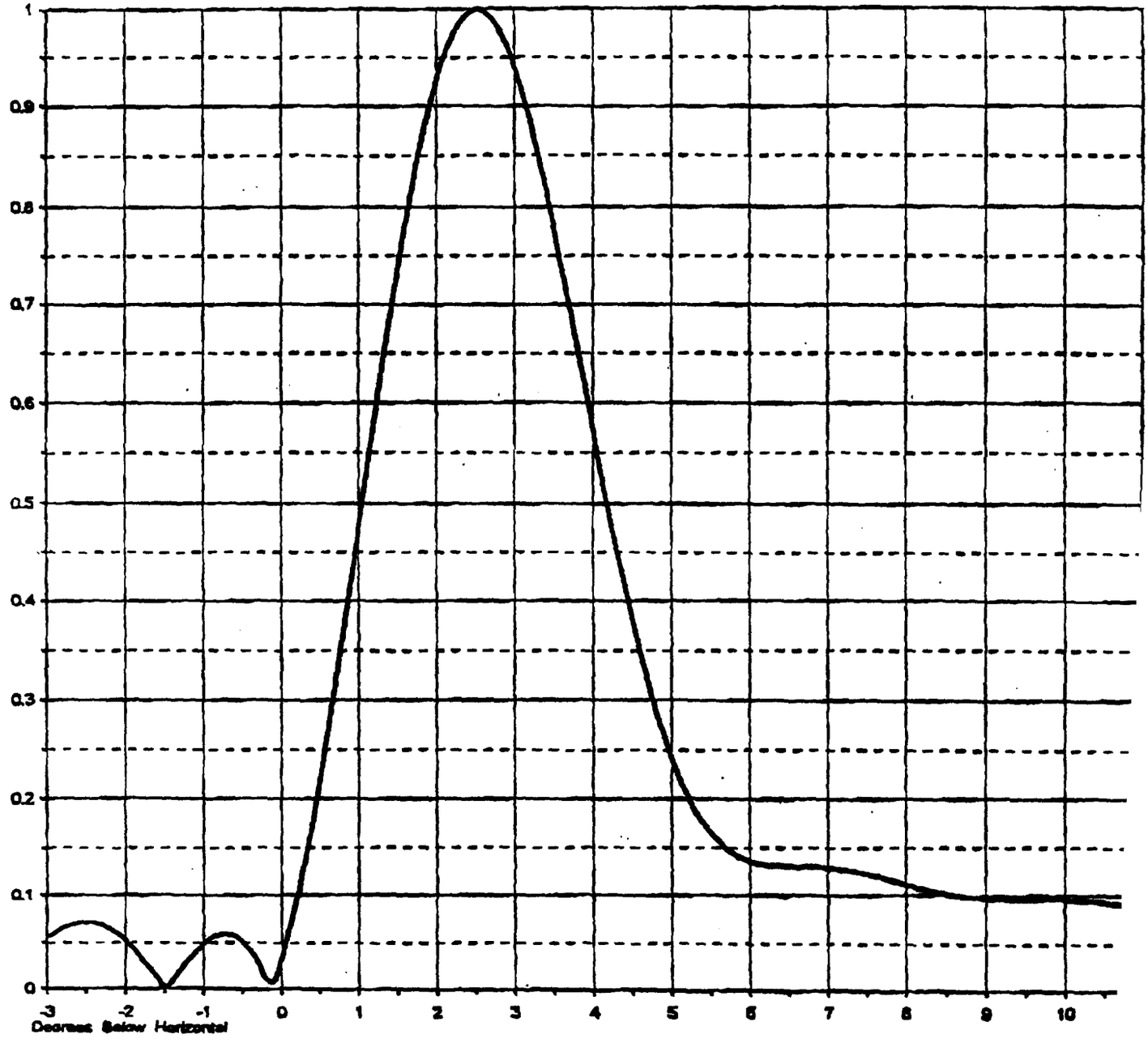
Ernie

DIELECTRIC COMMUNICATIONS
A UNIT OF GENERAL SIGNAL

Proposal Number			
Date	25-Aug-97		
Call Letters		Channel	40
Location			
Customer			
Antenna Type	TFU-32GTH		

ELEVATION PATTERN

RMS Gain at Main Lobe	25.00 (13.98 dB)	Beam Tilt	2.50 deg
RMS Gain at Horizontal	0.03 -(15.23 dB)	Frequency	629.00 MHz
Calculated / Measured	Calculated	Drawing #	32G250260

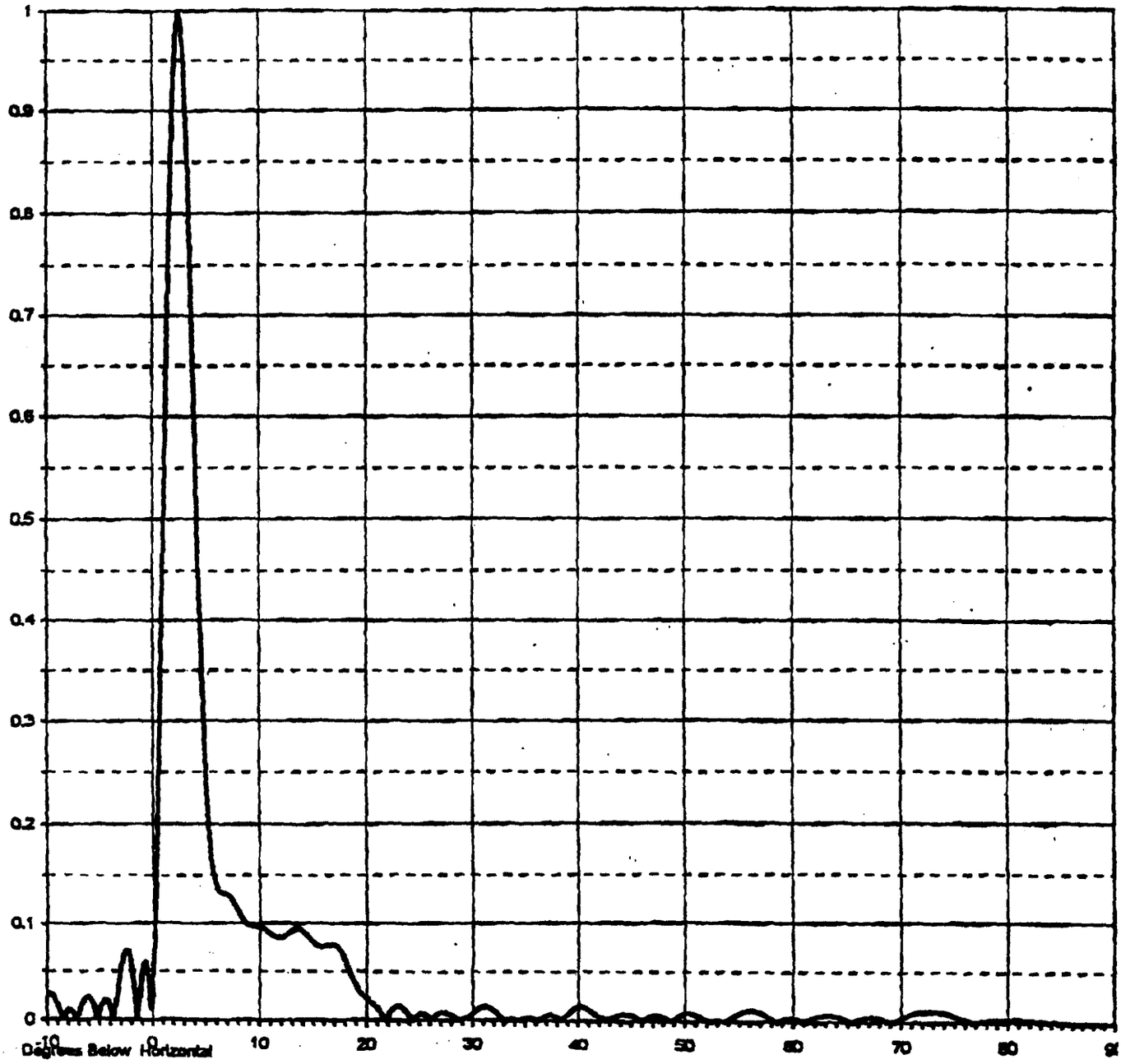


DIELECTRIC COMMUNICATIONS
A UNIT OF GENERAL SIGNAL

Proposal Number
Date 25-Aug-97
Call Letters Channel 40
Location
Customer
Antenna Type TFU-32GTH

ELEVATION PATTERN

RMS Gain at Main Lobe	25.00 (13.98 dB)	Beam Tilt	2.50 deg
RMS Gain at Horizontal	0.03 -(15.23 dB)	Frequency	629.00 MHz
Calculated / Measured	Calculated	Drawing #	32G250250-90



DIELECTRIC COMMUNICATIONS
A UNIT OF GENERAL SIGNAL

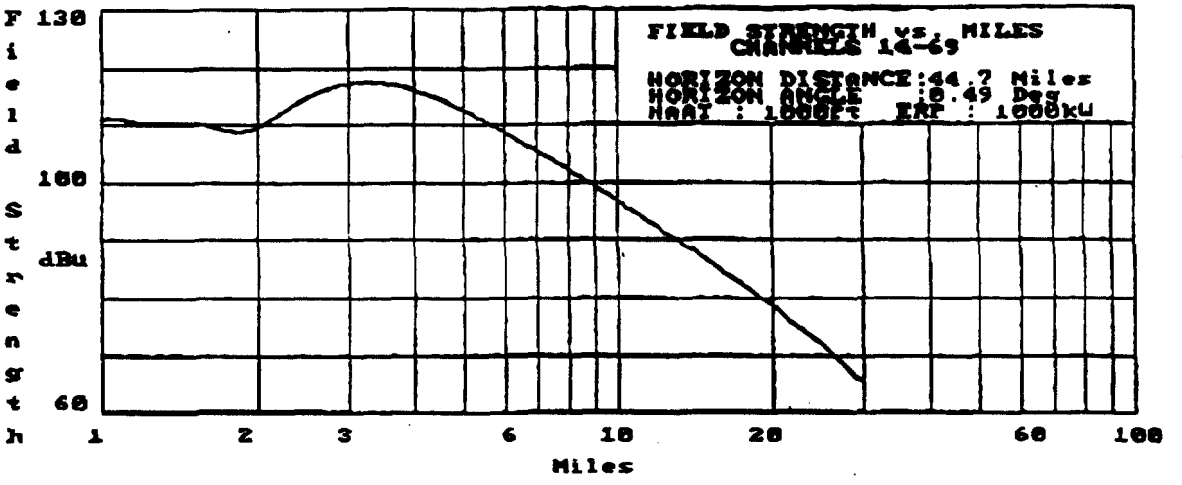
Proposal Number
Date 25-Aug-97
Call Letters Channel 40
Location
Customer
Antenna Type TFU-32GTH

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: 32G250260-00

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.025	2.4	0.996	10.6	0.093	30.5	0.011	51.0	0.007	71.5	0.010
-9.5	0.026	2.6	0.998	10.8	0.091	31.0	0.014	51.5	0.004	72.0	0.011
-9.0	0.014	2.8	0.979	11.0	0.089	31.5	0.014	52.0	0.002	72.5	0.012
-8.5	0.001	3.0	0.940	11.5	0.085	32.0	0.011	52.5	0.000	73.0	0.011
-8.0	0.009	3.2	0.885	12.0	0.084	32.5	0.006	53.0	0.001	73.5	0.011
-7.5	0.006	3.4	0.817	12.5	0.087	33.0	0.001	53.5	0.000	74.0	0.009
-7.0	0.007	3.6	0.739	13.0	0.091	33.5	0.002	54.0	0.002	74.5	0.006
-6.5	0.020	3.8	0.656	13.5	0.094	34.0	0.001	54.5	0.005	75.0	0.006
-6.0	0.022	4.0	0.573	14.0	0.092	34.5	0.001	55.0	0.008	75.5	0.005
-5.5	0.010	4.2	0.491	14.5	0.086	35.0	0.003	55.5	0.010	76.0	0.003
-5.0	0.009	4.4	0.416	15.0	0.080	35.5	0.003	56.0	0.011	76.5	0.001
-4.5	0.021	4.6	0.348	15.5	0.076	36.0	0.001	56.5	0.011	77.0	0.000
-4.0	0.011	4.8	0.289	16.0	0.075	36.5	0.002	57.0	0.009	77.5	0.001
-3.5	0.019	5.0	0.241	16.5	0.077	37.0	0.005	57.5	0.006	78.0	0.002
-3.0	0.055	5.2	0.203	17.0	0.077	37.5	0.006	58.0	0.003	78.5	0.003
-2.8	0.065	5.4	0.175	17.5	0.072	38.0	0.004	58.5	0.000	79.0	0.004
-2.6	0.071	5.6	0.156	18.0	0.062	38.5	0.000	59.0	0.002	79.5	0.004
-2.4	0.071	5.8	0.143	18.5	0.049	39.0	0.006	59.5	0.003	80.0	0.004
-2.2	0.064	6.0	0.136	19.0	0.037	39.5	0.011	60.0	0.003	80.5	0.004
-2.0	0.052	6.2	0.132	19.5	0.028	40.0	0.014	60.5	0.002	81.0	0.004
-1.8	0.034	6.4	0.131	20.0	0.022	40.5	0.014	61.0	0.000	81.5	0.003
-1.6	0.013	6.6	0.130	20.5	0.019	41.0	0.012	61.5	0.002	82.0	0.003
-1.4	0.010	6.8	0.130	21.0	0.014	41.5	0.008	62.0	0.004	82.5	0.002
-1.2	0.032	7.0	0.129	21.5	0.006	42.0	0.005	62.5	0.006	83.0	0.002
-1.0	0.049	7.2	0.127	22.0	0.003	42.5	0.003	63.0	0.007	83.5	0.001
-0.8	0.058	7.4	0.124	22.5	0.011	43.0	0.003	63.5	0.007	84.0	0.001
-0.6	0.057	7.6	0.120	23.0	0.015	43.5	0.004	64.0	0.006	84.5	0.001
-0.4	0.042	7.8	0.116	23.5	0.013	44.0	0.006	64.5	0.004	85.0	0.000
-0.2	0.011	8.0	0.111	24.0	0.006	44.5	0.007	65.0	0.002	85.5	0.000
0.0	0.035	8.2	0.107	24.5	0.001	45.0	0.007	65.5	0.001	86.0	0.000
0.2	0.096	8.4	0.103	25.0	0.006	45.5	0.004	66.0	0.003	86.5	0.000
0.4	0.177	8.6	0.100	25.5	0.006	46.0	0.001	66.5	0.004	87.0	0.000
0.6	0.268	8.8	0.098	26.0	0.002	46.5	0.003	67.0	0.005	87.5	0.000
0.8	0.369	9.0	0.097	26.5	0.004	47.0	0.006	67.5	0.005	88.0	0.000
1.0	0.476	9.2	0.097	27.0	0.007	47.5	0.006	68.0	0.004	88.5	0.000
1.2	0.583	9.4	0.096	27.5	0.008	48.0	0.005	68.5	0.002	89.0	0.000
1.4	0.687	9.6	0.096	28.0	0.005	48.5	0.002	69.0	0.000	89.5	0.000
1.6	0.781	9.8	0.096	28.5	0.002	49.0	0.002	69.5	0.002	90.0	0.000
1.8	0.863	10.0	0.096	29.0	0.001	49.5	0.005	70.0	0.004		
2.0	0.928	10.2	0.095	29.5	0.002	50.0	0.006	70.5	0.007		
2.2	0.973	10.4	0.094	30.0	0.006	50.5	0.008	71.0	0.009		

OVER TILTED ANTENNA
1,000 kW @ 2.5° Below Horizontal
50 kW @ 0.5° Below Horizontal



STANDARD ANTENNA
50 kW @ 0.5° Below Horizontal